5-2013

Not Shut in by Any Fence

Anna Bullock Brown
Utah State University

NOT SHUT IN BY ANY FENCE

by

Anna Bullock Brown

Thesis submitted in partial fulfillment
of the requirements for the degree

of

DEPARTMENTAL HONORS

in

English, Creative Writing
in the Department of English

Approved:

Thesis/Project Advisor Dr. Jennifer Sinor	**Departmental Honors Advisor** Dr. Phebe Jensen
Thesis committee member Dr. Evelyn Funda	**Thesis committee member** Dr. Brock Dethier

Director of Honors Program
Dr. Nicholas Morrison

UTAH STATE UNIVERSITY
Logan, UT

Spring 2013

Not Shut In By Any Fence

Anna Bullock Brown
Department of English

Abstract

From their beginning in the mid-1800s, zoos (or zoological gardens as they were first known) were meant for both research and education. They offered viewers the opportunity to see animals that they otherwise would never have seen. These animals were kept in cages to protect the zoo-goers. The history of zoos demonstrates a conflicting desire between our human need to connect with animals as well as our fear (literal and metaphoric) of what that connection might mean. Informing this creative project are three main areas of research: primary research in the form of interview, place-based research conducted at the National Zoological Park in Washington, D.C. and Library of Congress, and literature specifically about zoos (including the history of the modern zoo). This thesis explores human connection to animals within zoos, the connections we have with ourselves, and the connections we have with animals in our past, present and future.

Not Shut in By Any Fence

By Anna Bullock Brown

Introduction

When I was nine, Mrs. VanOrman gave us the task of writing a story about the desert. We'd spent the previous few weeks learning about cacti, the water cycle, lizards, owls, and other desert creatures. Most of the kids in my class chose to write about the blue sky and the rain clouds that never came. My story started, very simply, with "I am the kangaroo rat. I live in dark tunnels in the nice cool sand." Not much happens in my story. The kangaroo rat goes out at night, nearly gets caught by an elf owl, and quickly runs back home to his mother, heart pounding "100 beats a second." What strikes me now is the ease with which I became the kangaroo rat. The use of the first person, rather than third, demonstrates in some ways how easily my nine-year-old self could slip into the mind set of an animal. A little girl who pretended to be a lion or cheetah almost daily, seeing the world through an animal's eyes was second nature. I wanted to understand the kangaroo rat's little life. I wondered what drove it to leave its hole, even when it meant danger. I imagined its little body, breathing ever so quickly after its near death adventure. I wanted to know what it was like to be a kangaroo rat, and I used fiction writing to become one.

I have always been drawn to animals, and I have always explored my fascination with animals through writing. I wrote stories about my plastic animals for years, and, for a while during junior high, I assigned myself animals to write reports on each week. For my college experience, it only made sense to find ways to continue writing about the animal world.

My degree from Utah State is quite possibly the only one of its kind: I am an English major minoring in Bioveterinary Science. Writing, reading books, and exploring expression

through words have long been some of my greatest passions, but my interest in animals has never been far behind. I seek to bring creative writing and science together and to use my writing to explore the connections that we have with the animal kingdom. Humans will never fully understand animals. Our attempts to find meaning in their actions are simply projections of our own emotions. We can never truly know what is going on inside an animal's mind. And yet we never stop trying to connect to animals in some way. My thesis explores in general the limits and possibilities of connecting with animals.

The writing that typically comes out of veterinary sciences is rarely creative. It is usually informative, scientific, and expository. Books that cover the history of zoos mention the interesting irony that zoos represent—we desire to see the animals in their natural habitat, yet by placing them in zoos we defeat our own objective—but they rarely rely on personal stories, characters and metaphors to explore this paradox. On the other hand, personal memoirs on the topic of animals (i.e., the recent explosion of dog memoir) do well at musing on human-animal connection, but they often fail to bring in any science. With my background, I have been able to create a thesis that relies on the strengths of both science and creative writing. My essay is scientific, personal, lyric, and informative—something most books within the zoo section of the library do not achieve. For my thesis project, I have written a creative non-fiction braided essay that explores how humans connect (or disconnect) with animals, specifically within zoos.

The braided essay is a unique and non-traditional way to write nonfiction. The complexity of the form requires a great amount of work from both the writer and the reader. The braided essay format literally takes the form of a braid, where strands that are seemingly unrelated are woven together. Each strand is given a certain amount of space (say, a page) before the essay breaks (white space) and transitions to the next strand. Each strand is woven more and

more tightly with the other strands until, at the end, all ideas connect in a way that makes the reader realize that the three subjects could never have been unrelated in the first place. Traditionally, braided essays are comprised of three strands, though they can have four or five. The strands usually include: a strand that includes personal experience and site visits, a strand that tackles the story of something or someone other than the author, and a research strand that explores the question from a new and seemingly unrelated angle. My essay takes on a braided format because of the complexity of the question that I wish to address. Through jump cuts and juxtaposition, the braided essay allows me to bring together a rich variety of material that responds to an underlying question from different fields, vantage points, or disciplines. Given that my braided essay is about connection, the necessary connections between each strand that readers draw for themselves mirror the connections I talk about within the actual essay. The essay will literally and figuratively be about connection. At the same time, the gaps (white space) that are the hallmark of a braided form will replicate our inability to ever fully understand ourselves, our choices, or our pasts.

As writer Brenda Miller puts it, the gaps in a braided essay "emphasize what is unknown rather than the already articulated known." With my essay, I do not expect to come to conclusive answers. Therefore, I cannot simply write an argumentative essay. My thesis had to take the form of a braid because I wanted to question humans, cages, and connection to animals, but I did not want to provide the reader with only one answer. I wanted them to be able to interact with my piece. As readers explore the topic, slowly learning more and more as the different strands come together, meaning starts to germinate. Readers can come to their own understanding of the material without me having to tell them exactly what to think. They do their own thinking, which is an important and unique aspect of the braided essay.

Miles Harvey, author of *The Island of Lost Maps: A True Story of Cartographic Crime,* uses a braid to track the footsteps of a cartographic thief. Harvey makes several moves in his book that inspired me as I worked on my thesis. Harvey is not afraid to enliven moments with vivid details and with his own imaginings of how historical figures may have felt during critical moments. Harvey found subtle ways to work his own personal story into the seemingly unrelated story of the thief. One of the most important aspects of nonfiction is the ability of the author to relate to the people they are writing about and to be able to relate the subject matter to themselves in personal ways. While my essay was limited by its length, meaning that I could not mimic most of Harvey's movements, his work inspired me to place myself in the mindset of the people I write about. Writing is all about connection with ourselves and with other people, a lesson Harvey's book has helped me to learn.

One of the greatest strengths of the braided essay is that the reader's initial experience is fragmented. At first, the strands do not seem to relate. However, by the end, the connections between the strands and the connections between the author and the subject are very clear. My thesis suggests that the same is true for our relationships with animals. We may not be able to read their minds, as I tried to do with the kangaroo rat, but our future and theirs are ultimately connected.

Not Shut in by Any Fence

The first morning when I woke up, my face was swollen. I do not mean that it felt a little puffy from crying (which I had been doing before I finally fell asleep). I mean that I could hardly open my eyes, because the flesh around them and underneath them was three times larger than usual. That is the sort of swollen I am talking about. I have never had a swollen face before. I'm not allergic to anything. I hadn't been bitten by any bugs. I felt like Harry Potter looks in the seventh movie when, about to be captured by the bad guys, he gets a curse full in the face and becomes unrecognizable in seconds. My lips were balloons, stretched so tightly they might pop. I lay in bed, eyes watery, listening to Debi and Jeff yell at each other about politics and religion. A Catholic Democrat married a Mormon Republican. I am not sure that was the best idea for either of them. I knew they knew I could hear them. How could I not? Debi was yelling so loudly that the neighbors could probably hear. To cap it all off, it was raining.

When the Harwoods, Debi and Jeff, offered to let me stay in their guest room for six weeks while I did research at the Library of Congress and National Zoo, I had jumped at the chance. Rent, it turned out, was not cheap in the Washington, D.C. area, and were it not for their generosity, I would not have been able to afford the trip at all. But when Debi had come to get me from the airport, I wanted nothing more than to get back on a plane, go home, cuddle with my fiancé Tony, and pretend I'd never gotten the insane idea to come out here all by myself in the first place. She was a complete stranger, and she could have just as easily been kidnapping me as taking me to her home (a scenario which I imagined quite vividly the entire drive to their house). What had I gotten myself into?

Six weeks felt like an eternity, and the last thing I wanted to do that first day was try my luck with the metro with a swollen face. I stayed in bed until the afternoon, when the storm

between Debi and Jeff seemed to have settled, the rain had gone, and my face felt a little more normal, though I wore my glasses in an attempt to hide my swollen, puffy eyes. I had to be brave. It was that, or stay in bed and waste all the money it took for me to get here in the first place.

After an hour long phone call with my mom, during which I cried again, I decided it was time to face the metro. I'd been on the metro before, but my parents had been with me, showing me how to navigate. Now, it was just me. I scanned all the stops on the map and decided Grand Central Station sounded safe. I'd gone there before with my parents, so I knew what it looked like. I decided that I needed to stick with what I already knew. When we'd taken the metro together when I was 17, we had come out the entrance and walked directly toward the Capitol. I knew the Library of Congress was right behind the Capitol.

The Bethesda entrance to the metro was dirty, and it smelled wet, as if moisture had been gathering down there for years. It was a smell I could almost taste, and as I walked down the escalator, the smell became more and more like a tangible wall. It was almost like you could touch the smell of the metro, or like it was trying to touch you, grab you, and force you down into the dark tunnels that went who-knew-where.

Glancing from left to right, nervous but trying to act like I wasn't a tourist, I charged onto the train when it came sliding in to the station, and quickly picked my seat by a window. Each time the train stopped, I anxiously checked my map and the platform signs to make sure it wasn't my station. If I missed it, where would I end up? Maybe I'd ride clear to the end of the line before realizing Grand Central Station had been left behind long ago. Maybe I'd get lost. These were silly thoughts, I knew, because all you had to do was get off the train and wait for another one to take you back the same way you'd just come. But still. Getting off at the right place felt so

critical. The worst part was that, while underground, my phone lost reception. I was totally cut off from everyone.

High in the mountains of China, in the provinces Sichuan, Gansu, and Shaanxi, there is a small population that has lived in the same basic area for thousands of years. They prefer the cold weather, and in fact, they cannot survive in hot weather because their bodies don't expel the heat. Ranging over six different mountain ranges, with the Min Shan Mountains as the heart of their habitat, giant pandas weave in and out of bamboo and trees, their black and white coloring a perfect camouflage. Once, long ago, there were 100,000 Giant Pandas roaming freely, but now, it is impossible to say exactly how many pandas there are out there. They have become isolated, cut off from humans and from each other.

Pandas got left out. They come from China, yet they were never inducted into Chinese culture. The Chinese zodiac is filled with animals; the rat, the ox, the dragon, etc. What about the panda? Instead of becoming part of the zodiac, pandas were placed in cages. As early as 206 BC, during the Han Dynasty, pandas were placed in the Emperor's Garden along with other animals suitable for display. Something about their black and white fur, their rounded heads and ears, their unique gait and shape, made the pandas worth collecting.

To the rest of the world, the panda was a complete unknown, a mystery creature. The first westerner to see a live giant panda didn't see one until 1916, and the first panda exported to the US didn't leave China until 1936. Ruth Harkness, a millionaire widow, took a liking to a particular panda she saw in China, and brought it home with her, labeling it a "dog" to get it through customs. Ruth took her panda to several different cities, showing her off to an excited public. After only a few short years, the panda died of pneumonia, the first of many that would

fall victim to humans with no idea of how to meet their complicated needs. Because of the difficulty of caring for pandas in captivity, exporting pandas was halted in 1949 by the Republic of China. Ever since, the legal restriction on exporting pandas the panda has only increased the exoticism of the panda, especially in the Western world.

The panda is a living contradiction. The scientific name *Ailuripoda melanoleuca* means black and white cat-footed bear. In China, they are often called the cat-bear. Unlike other bears, pandas have an elongated "panda thumb" which is like a sixth finger. Pandas use the "thumb" to grasp bamboo with extra dexterity, which makes their motions human-like. Rolly polly in black and white, when we see a panda we tend to see a harmless teddy bear. But then comes their order: carnivora. These bamboo eating bears are classified as carnivores? Somewhere in their evolution, pandas switched their diets to all bamboo, but their digestive systems didn't keep up with the change. Left with a digestive tract meant for an omnivorous if not completely carnivorous diet, pandas are forced to spend 14 hours a day searching for and eating bamboo in order to digest enough to fuel their bodies. Their own evolution sold them short. They wander around, leading solitary lives, eating, eating, eating. They're a strange animal right out of a fairy tale.

Once upon a time, there was a boy named Carl. He was born on June 10th, 1844, just two months before the first zoological park in Germany opened in Berlin. Carl's destiny was entwined with animals from the very start. One day, when Carl was very young, his father, who worked as a fishmonger, was presented with an interesting catch. His workers brought him four seals that they had accidentally caught in their nets. Not knowing what to do with the seals,

Carl's father kept them. A humble man with a mind for making money, Carl's father saw a chance in the seals, and he took it.

A fascinated four-year-old Carl watched as his father made large tubs out of wood and filled them with water. His little eyes must have widened in wonder to see silky seals swimming in circles in front of him, the sun glinting off of their skin like light on shimmering gold. What raced through his mind as he saw and heard the seals, barking and spinning in their tubs, we can never know, but his boyish curiosity must have been sparked. Carl's father started charging the equivalent of a penny per head for visitors to come look at the seals as they splashed in their small living spaces. It was here that Carl learned from his father that animals, placed on display, had the potential for making their owner money. Lots of money.

When Carl was eleven, he and his father undertook a small journey to transport some new specimens for their collection. For a few years now, they had been purchasing animals with a frantic sort of greed. This time, however, the scheduled pick-up was a problem. There was no train that went from their home to the town, and so they had to transport the animals by carriage, tying the various cages to the top like too many hats stacked on top of each other. When they arrived home, father and son discovered to their dismay that a raccoon had escaped. The raccoon was likely dead, and Carl and his father decided not to go looking for it. To draw any attention to an escaped animal would only incur trouble. Carl didn't know it then, but the loss of the raccoon was only the beginning of countless animal deaths he would witness during his years in the animal trade. The death of one animal in the face of gaining several more was a small price to pay, and it was a loss Carl and his father were willing to accept.

When Carl turned 15, his father presented him with a choice: he could take over the fishmonger business or continue with the trade in animals. Carl's father admitted that becoming

a fishmonger was the safer but less lucrative choice, and he advised Carl to pursue that career. However, Carl decided to continue with the animals, and his father was not disappointed in him. Fifteen, with a half-baked education, Carl became the head of the business. Carl could not have known then where his choice would take him. He could not have guessed, at fifteen, how the animal business would become more than his profession; it would become his fame.

On day two, my arms and legs broke out in a mystery rash. Small pink bumps, like mosquito bites, dotted my skin, itching. During the day, it wasn't so bad, but once it came time to go to bed, the itching grew so incessant I couldn't sleep. The rash stayed around for weeks. I took Benadryl every night, but eventually gave up because it made it nearly impossible to fall asleep, even with Tony's voice in my ear as we talked on the phone each night. Each bump became a symbol of what my new life felt like: stress, discomfort, misery, isolation. My body was trying to tell me what I already knew. I was out of my comfort zone. I couldn't wake up before 11:00, and the idea of walking to the bus to get to the metro felt like way too much to ask.

On the phone with my sister Katie, a medical assistant, we decided the rash wasn't something to be too concerned about. If I could find ways to be less stressed, it would likely clear up. As we talked, we decided six weeks was too long. On June 2nd, she was going to drive the two hours from her home in Mechanicsburg, Pennsylvania, and come get me. Instead of six weeks, my trip would be whittled down to a survivable three. Feeling slightly better, I hung up with her and pulled the blankets around my face. Maybe I'd go to the zoo tomorrow instead. Today wasn't really the best day, after all, and I still had three weeks to go. I slumped back down and closed my eyes.

My skin wouldn't stop itching. If I stayed in bed, the Harwoods would think me lazy, and I'd wind up coming home with absolutely nothing to show for it. No research. No spectacular story about some animal at the zoo. I'd been awarded an undergraduate research grant, which was what got me here in the first place, and people, especially back at school, would wonder how I could have wasted so much opportunity. I'd be a failure. I knew I would never forgive myself for ruining something so unique and special. So I got out of bed, aching to scratch at the little bumps, and I put on my cut off shorts and a t-shirt. I called my mom, but she didn't answer. I texted Tony, but he'd be out of cell range on the farm, so I knew I wouldn't hear from him until 10:00 or 11:00 that night. It was all up to me.

That day was my second day on the metro, but that didn't make it any less terrifying. Like a horse facing a blistering cold breeze, I kept my head down. People got on and off, and I tried not to make eye contact. I looked stolidly out the window, even though you can't see anything out metro windows except the occasional light. I didn't want to talk to anyone. Didn't want to make eye contact. A person starved of her family, I ironically didn't want to connect with anyone. It was too hard.

Anyway, if I *did* talk to someone, once they found out I was visiting from Utah, they would inevitably ask me why I was in D.C., of all places, and I'd have to tell them.

"Oh I'm here doing research for my thesis."

They'd look all impressed and then ask the most dreaded question of all: "Oh really? What is your thesis about?"

Most people think that a thesis is this huge thing that comes from highly advanced thinking and research, usually medical or deeply steeped in math. My thesis was neither of those things. I didn't really know *what* my thesis was about— not yet, anyway. My research in D.C.

was supposed to lead me to what I was going to write about. But what if I never found anything worth writing about? The pressure was far worse than wondering if I'd get off at the wrong stop. Maybe that was the real reason I kept my head down. Far worse than being alone, if someone asked me about my thesis, I would have to reply, feeling smaller with every word.

"I want to write about human connection to animals. I'm going to research zoos and write a creative nonfiction essay."

Always, by the third or fourth word, I would rush to get to the end of my explanation. It did not matter who I was telling, they did not get it. They would stare at me vacantly as if I were some sort of odd creature. Humans and animals what? Creative nonfiction? Is that even a real thing?

Nope. Not real. My thesis was not real, and the more I had to tell people about it, the more ashamed I felt. Not only was I useless here, unable to research because of my own pity-party, but the subject I was trying to delve in to was useless, too. If no one could even understand when I described the topic to them, how could I ever expect anyone to want to read an entire paper about it? I couldn't. I didn't want to write something that nobody cared about. My thesis would probably bore people to death. It wasn't interesting. It wasn't complicated enough. Zoos, after all, are only for kids. I felt like a little kid. My entire existence in D.C. had no purpose, and talking to someone would only prove it. And so I remained silent, letting my own thoughts bring me down instead. I didn't look up until the train jerked to a stop at the Woodland Park/Zoo station.

The main gates of the National Zoological Park, which face Connecticut Avenue, are flanked by two large lion statues. Greyish white and majestic, each statue reeks of what they've been carved to represent: royalty in the animal kingdom. *Once you pass through these gates*, the

statues say, *you are in our domain. You will see us as royal.* Most of the people entering the zoo don't give the statues a second thought.

In between the two gates, there is a large concrete word ZOO surrounded by flowers and bushes. It stands there, inviting, like the huge concrete pipes that used to be at one of my childhood playgrounds. Children (and some adults) climb up on the large letters to get their picture taken. As I walked through the gate amid the constant stream of other people flocking through the gates of the free zoo, I no longer kept my head down.

I'd been to this zoo once before, so I knew it, sort of. I took my first left after the gift shop and wound my way down the cheetah path. Around the corner, close to the edge of the zoo, one cheetah lay in his enclosure, sleeping (or so I assumed). I stopped. I stared. I grinned. He was absolutely beautiful. His fur mirrored the dappled sunlight that dripped through the leaves of the tree above him. His eyes were closed, and the darkened circles around his eyes and the black tear trails down his face looked almost Egyptian.

"Hi," I whispered, smiling at my new friend. I didn't know his name. Maybe it wasn't even a he. But I knew I loved him, right then. He couldn't understand me, but it didn't matter.

A young man and woman rounded the corner. I carefully avoided their glance as they continued walking, hardly pausing to look at the cheetah. They'd know what it meant if I said "Hi" to them, but I didn't make a sound. I preferred to continue my one sided conversation with the cheetah.

I settled myself on a bench across from the cheetah enclosure, getting my hands sticky with a palmier I'd bought at a bakery. A young man walked by, stopping to gaze at the prone body of the sleeping cheetah.

"Here kitty kitty!" he called out to it. I smirked. As if that would do something.

He started throwing sticks. Casual as a man in the park throwing sticks to his dog, he actually picked up branches off the shrubs that line the low barrier wall and threw them toward the relaxing cheetah. The sticks didn't even make it halfway across the enclosure, harmlessly falling to the grass. The cheetah didn't twitch. Was he used to this sort of horrid attempt to get his attention? The boy wanted to get a reaction from the long legs and powerful muscles. He started throwing a stick again, and I realized he couldn't have known I was there, sitting on a bench behind him, watching and taking notes.

When I was twelve, my own intense desire to see exotic animals up close inspired me to apply to be a volunteer for Utah's Hogle Zoo. As a volunteer, I'd have unique opportunities to work with zoo animals. Someone who had played with plastic animals rather than dolls, I couldn't let the opportunity pass by. Just like the boy throwing sticks, I wanted the chance to see the animals move. I wanted to somehow come to understand them.

The Hogle Zoo's volunteer selection process included a set of two interviews, some classes, and a test. If you passed all of them, you were then lucky enough to work for the zoo for free. In my first interview, I can remember the dark haired lady sitting across the table from me. She looked me straight in the eye and asked

"What would you do if you saw someone mistreating an animal?"

I am sure that my little mind raced as I tried to think of the answer she was looking for.

"I would ask them to stop, and if they didn't, I would go and find someone in charge and tell them about it." I must have pleased her with my answer, because I made it to the second round of interviews, passed the test, and became one of the red shirt wearing zoo volunteers, complete with a tag.

I didn't say a word to the boy at the cheetah enclosure. He was probably throwing sticks because he was disappointed that the cheetah was sleeping. Disappointed that it didn't seem more real. Disappointed he wasn't actually in Africa, watching a cheetah run. Zoos seem to be a breeding ground for disappointment. Something always falls short of our expectations. We go, wanting to be entertained, and the animals are sleeping, or not even visible. The zoo officials just want us to learn about the animals, and they want to save them, but that doesn't always work, either.

I didn't tell the boy to stop throwing sticks. Just like I didn't have the guts to wake up in the morning. I ate my palmier and felt more disconnected than ever.

Something had to change.

Pandas live off of bamboo almost exclusively, and like pandas, bamboo is an anomaly. There are several species of bamboo, and each has a specific flowering time. When the bamboo flowers, it gives off seeds—the next generation. Once the seeds have been dropped, the bamboo itself dies off. There is an age gap between the recently dead bamboo and the seedlings that eventually replace it. The seedlings can take 10 to 100 years to reach maturity, depending on the species. Therefore, while the seedlings slowly grow, there is no bamboo mature enough to be eaten by pandas. If one large area is populated by only one or two species of bamboo, when flowering time comes, that area can be completely devastated. Devoid of any edible bamboo, the area becomes unlivable for a panda. Pandas can switch their diet from one species of bamboo to another, but in order to do so, they have to migrate to the next spot still lush with bamboo. Food shortages aren't the only problem, either.

Logging in China has drastically shrunk the range pandas have for foraging. When the Chinese government recognized the problem in the 1940s, they began to make conservation efforts by setting aside land as panda reserves. Different provinces were called upon to set aside their land for the giant panda, and they did so quite willingly. Even with those measures in place, more than half of panda habitat was lost during the 1970s and 1980s.

Each reserve has become isolated from the other because of logging and human population growth. There are no corridors of forest that link the reserves, and the pandas are trapped. When their favorite bamboo suddenly flowers and dies off, they can't wander off to find a different species mature enough to eat. Instead, they starve and die out.

If a panda is fortunate enough to have a sufficient food supply, there is still a shortage of something else: other pandas. When breeding time comes, each population is isolated within the reserve they live on. Pandas, it turns out, can be very particular about whom they'll breed with. If one panda can't find another panda that suits them, they won't breed. No breeding, no babies, and panda numbers start to dwindle. Right now, the exact number of pandas in the wild cannot be pinned down, but scientists place the number at around 1,500.

Numbers are difficult to determine because scientists can't reach every single wild panda in order to tag them. There are few roads that penetrate the reserves, not to mention the fact that pandas don't stay within the boundaries. So much remains unknown about the species as a whole, but we know enough to know that their fragmented existence needs to be remedied. We have to figure out how to connect the different reserves to promote better eating and better breeding. Artificial corridors could be built, but roads and villages get in the way. Currently, it is estimated that the remaining ecospace for pandas totals less than 5,000 square miles. That sounds good, but in reality, it is less than 25% of the Greater Yellowstone Area. When the Chinese

government called for the reserves to be created, they were trying to give pandas a place to roam free and remain wild, but what they didn't know was that they were actually building cages.

If an animal enclosure from Carl's lifetime could talk, what would it whisper to us? Perhaps it would mention the Polar Bear and Alaskan Brown Bear hybrids that paced upon its concrete floor, often standing on hind feet to beg for loaves of bread fed through the bars from the zookeepers. Or maybe it would speak of the slender fingers that would grasp the tall bars of the monkey cages, gaps too small for escape, but big enough for human food to be tossed through from keepers and visitors alike. The concrete and the bars cannot talk, however biting or loud they may be.

Carl and his father continued to learn the hard way how best to transport animals. Over the years, the death rate of animals in transit lessened, and costs slowly started to decline. Carl found himself in a position to exploit the growing fascination that Germany had with animals. The more exotic animals that arrived in Europe, the more people wanted to see what other animals were out there. Fascinated by zebras and lions, people wanted to see what else the world had to offer. Demand for more new animals grew. By first capturing exotic animals and then selling them, Carl knew he could make money. Like a frenzied antique dealer, he began buying animals from other menageries, zoological gardens, and circuses. His purchases were no longer for his own growing collection, but now, he bought them simply to turn around and sell them at a higher price. Soon enough, Carl found himself with a nicely established business trading and buying animals.

By the early 1870's Carl had his own group of "catchers" that would go on expeditions to Africa, hunting specifically for baby animals, usually killing any adult animals that stood in their

way. Very matter-of-factly, Carl describes in his memoir the usual method for killing elephants. The trick was to go for their Achilles heel. Literally.

A group of horsemen surrounded the targeted elephant, a living noose meant to be drawn tighter and tighter. First, the lead man would irritate the elephant into charging. The man being charged would deftly distract the elephant while the other men in the party drew as close to the elephant as they could, until finally, one horseman would draw near and cut the tendon of the back leg. Suddenly crippled, the elephant would stumble, and the horseman who only moments before had been chased would turn abruptly around and proceed to cut the front tendon. With her legs literally cut out from under her, the elephant fell like a rag, helpless.

All the men would stand, breathless, their horses stamping and snorting, as the elephant, sides heaving, slowly bled to death, the red blood a tiny flood beneath their horses' hooves. One particular photo shows one of the catchers astride a bicycle. The bicycle stands on top of a mother elephant, recently killed. She had to be eliminated in order for the catchers to lay hands on her baby.

The goal of Carl's catchers was to "harmlessly" catch animals intended for the animal trade. No thought was given to the collateral damage. To Carl, it didn't seem to matter. Business was booming.

Over the next few years, Carl would invest large amounts of time and energy to ensure the variety and exoticism of the animals he caught. For example, in Mongolia, there is a wild horse known as the Przewalski's Horse. In the 1800's the wild horse could be found in abundance, and Carl sent an expedition to retrieve some of the wild horses for his collection. They had to travel on foot over mountains and rough terrain to even reach the areas where the wild horses lived. Before capture was even possible, catchers had to make friends with local

villagers in order to enlist their help. Finally, after four or five months of preparation, catchers and villagers went out, rounded up fifty-two of the horses much like American cowboys rounded up cattle to be sold and slaughtered, and then drove them over miles of land until they reached a train station. In the end, twenty-eight actually made it back to Carl's animal park.

Fast forward to modern times when only Carl's ghost can see what has happened to the horses he so avidly hunted. In 1959, the first volume of the International Zoological Yearbook was published. Among the other articles published, there is one entitled "International Symposium on the Preservation of the Przewalski Horse." In 1966, the horse became extinct in the wild, living on only in zoos. Preservation and breeding were, of course, high priority. In issue 17 of the Zoological Yearbook in the year 1977, an article appears in the Breeding in Captivity section entitled "The Future of Przewalksi Horses In Captivity." Almost all Przewalksi horses are descended from nine horses that come from a herd captured in the 1940s, and after years of conservation efforts, the horse was reintroduced into the wild. Currently there are only 1,500 Przewalksi horses in the world, in zoos and in the wild. These numbers, along with the simple words "endangered" and "scarce," are a legacy of Carl's nobody has seemed to notice.

It began with a silent dance party in my bedroom. Five days into my research trip, I knew I had to do something. Every day was drudgery, and it had to change. That Tuesday, I wore my hair down and I had on my favorite green shirt. I twirled, I spun, I laughed—all in front of my digital camera, which I'd placed carefully on the white claw-footed dresser.

I was going to make a music video. The most epic music video ever. The task of making a music video was not new to me. Three years earlier, when my best friend, Shaylee, and I found ourselves moving back home after disastrous first semesters away at college, the two of us had

decided we needed something to entertain us. We began a music video. It was a simple project, meant to be just for us. We started it, became busy, and stopped working on it. A year later, as summer was drawing to a close, we suddenly felt pushed to finish our video. Our lives were changing quickly. Who knew when our next chance to be together would be? Maybe we'd both be getting married soon, or maybe we'd just never get around to seeing each other. So we worked on that video with ferocity. We filmed ourselves dancing in all sorts of places, and worked tirelessly on editing the video. That video, to this day, is a symbol of our friendship. It's a reminder to us both that we found reasons to dance, laugh, and have fun, even when both of us felt that our lives were going nowhere. My nieces and nephews still request to watch that music video.

So this summer, without anyone, feeling trapped by my inability to find something worth writing about, I would dance in front of every national monument in Washington, D.C. I wanted to make another symbol for myself. I wanted to prove to myself that I could get through the feeling that my thesis was going nowhere. Before I even began filming, I was anticipating the way my mom would react. I was positive she would cry she'd love it so much. My nieces and nephews, of course, would continue to think of me as the coolest aunt ever, and Tony would laugh and tell me I'm the prettiest dancer, even though I can't dance. The music video would be my way of showing everyone that I conquered my thesis and my trip to D.C. with flying colors.

Later that day, at my section of one of the long brown desks dotted with classic green shade lamps, in the Library of Congress science reading room, in the Adams building, I sat looking at the stack of ten books I'd taken from the stack, having been led there by a librarian. At that moment, the act of doing research wasn't that oppressive. I love reading and researching. Thumbing through those books in the silent Library of Congress (the ultimate library) sent

shivers of pleasure through my spine. It wasn't the actual research that was the problem. It was the fact that nobody else could possibly care about what I cared about. It was the ever-present fact that, while I found my research fascinating, I still had no *real* central question to organize my thoughts under. I sensed that it was time to create the next clip of my video.

I placed my headphones carefully in my ears, glanced around to make sure the coast was clear, and pushed record. Peeking out from behind my book with a grin, the video shows me mouthing the words to the song. "You can be yourself, I promise it will help." Behind me, a woman with short blonde-grey hair walks past, oblivious to my antics.

I set my book down, stopped the camera, and sat looking at all the studious library-goers around me who had missed what was probably the only person to ever dance in the Library of Congress Science reading room. Nobody had seen me do it. Except perhaps the murals hidden behind scaffolding (a restoration project was underway—the aged murals needed a face lift, it seemed). As I sat grinning to myself, I imagined the murals were grinning, too.

For the next four hours, as I flipped through the pages of countless books about zoos and the part we play, I could not stop smiling. My fingers danced across pages, my toes tapped, I titled my head back and forth (ever so slightly) and I took notes like an excited student on their first day of class. I had danced, albeit sitting down, in the Library of Congress. I had lip-synced in a reading room meant for seriousness. There was a rush to doing something out of the norm. I had to put aside my personal fears and just dance. It was empowering to know that I could create something even when the actual moment of pressing record was frightening. I knew I'd found something that would ensure my survival during the next few weeks.

Later, as I left the library, I got off the elevator on the first floor, thinking that was the floor I wanted. As I stepped out into the hall, I realized my mistake. There were no security

guards or metal detectors or scanners, and there were no doors. Thinking that maybe there would still be an exit around the corner, I continued to meander down a hallway that most average Joes had never set foot in. I was soon hopelessly lost, and I knew I had to get back to the elevator.

As I re-traced my steps, I realized I was completely alone. Nobody was walking by, and I most certainly could not see or hear anyone. Alone in a building I'd never been in before, slightly lost, I set my camera down, pushed record, and danced.

In 1972, President Richard Nixon paid a historic visit to the People's Republic of China. The U.S. and China had been politically separated for 25 years, and China was considered one of America's greatest foes. Nixon's visit heralded the beginning of friendlier relations, and the People's Republic wanted to prove to America that they could make up for all the years of silence. As a sign of their gratitude for Nixon's visit and their eagerness for positive relations to continue, the PRC sent the US a gift: two giant pandas named Ling-Ling and Hsing-Hsing. The First Lady donated the two pandas to the Smithsonian National Zoo, and 1.1 million visitors came during the first year to see the diplomatic pandas.

In a twelve minute newsreel, an upbeat announcer tells the tale of the gift from China. The flickering movie shows Mr. Collins, a zoo scientist, wondering if the pandas will be able eat the bamboo they have growing at the zoo already. A few frames later, the First Lady can be seen standing at the edge of the panda enclosure, looking in at the simple grassy area and pool that served as their new habitat. With a last glimpse at the two pandas, each in their own sunny enclosure, the narrator comments that "there will be pandas in the zoo and in the wild for a long time to come." The outlook for Ling-Ling and Hsing-Hsing was positively grand.

The pandas were extremely popular, and when breeding season came along, their popularity increased, especially on the news. The zoo waited until the pandas turned three, and then all of the US watched as time after time, the pandas tried to get pregnant. In 1975, the zoo doggedly claimed that they would have a bicentennial baby panda. But no baby panda came. Two years later, in 1977, a bit of a race between the National Zoo and Japan's panda couple ensued. Which two pandas would be able to produce the first baby outside of China? In September 1978, NBC news happily reported that Ling-Ling was potentially pregnant at last. Japan hadn't produced the first panda outside China, so the National Zoo still had its fingers crossed. But one year later, there was still no panda baby. News casters reported that the pandas would get one more chance, and then they'd have to try artificial insemination.

By 1981, the panda pair still hadn't produced a baby. In an NBC newscast, the pandas are strangely anthropomorphized. In the news clip, they show video of Ling-Ling and Hsing-Hsing, while a voice over says, "It seemed to be an ideal marriage, [but] their nine year marriage has produced no children," and "The poor guy tries so hard, you can imagine what it's done to the male image." The National Zoo, desperate for a panda baby, decided to fly in another panda from London, which news casters laughingly called an arranged love affair. Even after artificially inseminating Ling-Ling with the London visitor's sperm, no baby came. Just like TV celebrities, Ling-Ling and Hsing-Hsing were national news each time breeding season came along, and they kept failing the expectations of their handlers. With so many failed breeding attempts, the panda handlers must have begun to feel as though they were failing the pandas, too.

Finally, on Thursday, July 21st, 1983, Dan Rather reported that at 3:00 in the morning, Ling-Ling had a baby. But only three hours later, the four ounce infant died (later it would be determined that the baby died of pneumonia). To add to the drama, on December 7th, 1983, Ling-

Ling became seriously ill. Diagnosed with kidney failure and anemia, both of which may have been caused by her pregnancy, things didn't look too good for Ling-Ling. Questions immediately arose. If Ling-Ling died, how could the zoo replace her? At that time, China had banned pandas from leaving China for at least two years. Without Ling-Ling, how could there be hope for continued breeding efforts? The zoo would be a failure. Two decades from now, the zoo would move to a stance of conservation. Panda breeding would still be a priority, but the argument would change. Here, in the 1980s, the race to have a panda baby was still predominantly commercial. The zoo had something to prove, not preserve. Having a baby seemed to be the only thing that mattered. It would prove their efforts hadn't all been a waste.

Ling-Ling made it through her disease, and once again gave birth on Monday, August 6th, 1984, but this time to a stillborn cub. Three years later, baby number three came on Tuesday, June 23rd 1987. This one appeared to be healthy, and the US held its breath with excitement. Maybe, finally, the pandas had succeeded! One day later, zookeepers discovered that Ling-Ling had actually given birth to two cubs, but the second had been stillborn. Saddened, they placed even more hope on the surviving cub. However, on June 27th, just before midnight, the cub stopped squealing. Fluid had traveled from the abdomen to the lungs, suffocating it. Four for four had died, and it wasn't over yet.

On Friday, September 1st, 1988, Ling-Ling gave birth to panda number five, but this cub was born with an infection. Zookeepers moved the cub to an oxygen tent because it had a fever, fluid in the lungs, and too many white blood cells. The next day, the cub died. This was the last cub that Ling-Ling would give birth to. After its death, Ling-Ling cradled bamboo branches, just the way she would have cradled her cub, had it survived. In 1992, Ling-Ling died of heart failure.

Hsing-Hsing continued to live on, as a national treasure, until he was 28. The National Zoo wasn't sure if it would be able to get any other pandas once Hsing-Hsing died. Relations between the US and China had become strained once again. Trust between the two countries was rocky. Hsing-Hsing died in December of 1999 of kidney failure.

William Hornaday was the lead taxidermist for the Smithsonian Institution in the late 1800's, and he is credited for pushing Smithsonian officials to create the National Zoological Park in Washington, D.C.. When the zoo opened in April 1891, Hornaday was given the post of zoo superintendent, but because he was not named director, Hornaday left the National Zoo. In 1899, Hornaday went to work for the soon-to-open Bronx Zoo. As zoo director there, Hornaday found himself in the position to acquire new animals, a phase most zoos in the U.S. were in at the time. Where could they go to collect new specimens? Hornaday turned to one of the most famous men in the animal catching business: Carl Hagenbeck.

Knowing the brutal methods of animal capture, Hornaday found it necessary to write Hagenbeck a letter, asking him to remain silent about the catching process. He wrote: "I have been greatly interested in the fact that your letter gives me regarding the capture of the rhinoceroses; but we must keep very still about the forty large Indian rhinoceroses being killed in capturing the four young ones." Hornaday, it seems, had good reason to want to keep such a damming secret. If news got out about the paradoxical killing of animals in the name of animal collection and conservation, things could get messy.

How did that letter make Carl feel? As he was reminded of the large number of rhinoceros deaths, did his mind go to sea lions he had ordered? Did his heart clench, at all, to remember that, in order to bring back five baby sea lions, sixty-eight, the equivalent of an entire

sea lion colony, had been slaughtered? Even with all of the money he was making, there must have been a part of Carl that felt ashamed, wasn't there? Did any of his deeds weigh on him?

Along with the abundant growth of zoological parks during the late 1800's and early 1900's, trained animals exhibited in circuses were also extremely popular. People wanted to see animals for entertainment, and while zoos were entertaining in their own right, a circus filled with animals doing fantastical things was on its own level. Carl's business had always provided animals to circuses, and he could fetch a higher price if the animal was already trained. Appalled at the "brutal" way other animal trainers would tame their beasts, Carl was an advocate for a friendlier training regimen.

With apparent disgust, Carl mentions in his memoir that "the old crude method of training consisted of terrifying the animals." The "trained" animal would only obey because the alternative was pain, and the animal feared that consequence. Driven by fear and the promise of pain, animals would "perform" for their master. Carl described these animals as slaves. From his vast animal collection, he had come to know several of his trained animals very personally. Perhaps he started to see that they deserved more kindness, or perhaps he saw his advocacy of treating animals with kindness as a chance to clear up his name. Either way, he believed that if a real bond of affection and trust could be built between the animal and the trainer, the animal would perform out of love, and not fear. The trainer had to have patience for the animal's deficiencies. Perhaps all the animal deaths in the name of entertainment were catching up to him.

Even in the midst of his new move to treat the animals with kindness, Carl was still importing his animals and selling them for the highest price he could muster, even if it meant selling them to hunting ranges, another popular recreation of his day. In one instance, there was an elephant that was far too dangerous to keep (he was violent and angry constantly, making him

impossible to care for) and so Carl decided the elephant would have to be killed. Even in that moment, however, Carl found a way to make money off his animal. A sportsman was willing to pay good money in order to boast the he had killed an elephant, and Carl jumped at the chance to save some of his loss. Their plan was to shoot the elephant, point blank, while it was tethered to a wall in order to prevent its escape.

It seems paradoxical that a man who single-handedly wiped out sea lion colonies and who coldly sold animals to be shot at close range would be such an advocate against animal cruelty. Was it all a political stunt just to get himself out of the hot water he'd created for himself? Was he trying to clear his own conscience? Or was he just trying to find another way to make more money off his beasts? It all seems rather condemning, no matter how hard Carl tried to redeem himself. We can't know. Photos of Carl usually show an austere looking man in a black suit, black top hat, with gray, slightly out-of-control hair. His face, passive and calm, has wrinkles that could be seen as severe or kind. He's a difficult man to read. But if his words can be believed, Carl's move toward treating animals with a greater kindness was a stepping stone toward something even bigger.

I became a secret agent with the mission to dance in as many places as possible, regardless of who might see me. My music video was my way of building my own little bubble of hope. Hope that maybe I wouldn't turn out useless. That fear still lurked on every page I perused, and it leered at me from behind every glass wall at the Zoo. Every time I visited the zoo, I ached for a story. Like one of the worried little mice darting on the concrete floor of the orangutan's enclosure, I went from exhibit to exhibit, eyes darting from the signs to the people to

the animals, searching for something worth saying. Nothing presented itself, and my desire to hide myself grew. I felt so small.

One day at the zoo, as closing time drew near, I was walking near the back of the zoo when I came to a lovely little water fall. No animals were in sight, though the sign proclaimed it Monkey Island. This was a spot for dancing. I set my camera down on the bench and pressed record.

On May 25th at 3:56 PM, two weeks after the swollen face incident, I stood on the National Mall, halfway between the Capitol and the Washington Monument, just past the museums. People walked by, either exiting the closest Metro station or walking toward the towering obelisk. The sun was in position, just to the left of the monument. It was the time of day when the sun seems bigger and its lemon orange light reaches out and touches everything in a way that makes even dead trees look more alive. It was a perfect moment to film, but I hadn't danced so out in the open—not yet. By now, my skills at spotting places and moments devoid of human observation were keen. I knew when it was best to ride the metro so as to avoid crowds, and I'd managed to board the very last car (those are always the most empty) in order to be alone so that I could dance in a moving train. But here, at this moment, I really had to summon my courage. No matter what I did, someone was going to see me leaping to and fro for no apparent reason. But it had to be done.

I perched my camera carefully against my backpack, made sure the angle was right, pushed record, and ran out in front of the camera. I saw one group of tourists look my way as I took my starting position. They talked and laughed to each other. Were they laughing at me? Did they know that I was about to do? I hesitated. Maybe I'd wait. But my camera was already recording. No was not the time to worry about what other people would think about what I

wanted to do. The sun was waiting for me, and I'd never have a moment exactly like this one again. So I twirled my arms, jumped up and down, leapt left and right, quietly humming the tune of the song so I'd be at least somewhat on beat. Thirty seconds of dancing on the national lawn ended, and I hurried back to my camera. The tourists kept walking. Whether they noticed me or not, I had no way of knowing.

My chest heaved in and out as I replayed the scene on my small camera screen. It was absolutely perfect. My body was mostly silhouetted by the sun, and the towering obelisk was in just the right place, back and to the left.

Minutes later, as I awkwardly trundled my bike down the stairs that led beneath the mall to the metro, I realized I had no way of knowing if this particular stop had an elevator. With no elevator, there was no way for me to get my bike down to the actual train stop. For two weeks, I'd kept my head down each time I rode the metro. I'd avoided the gaze of anyone, especially those who were clearly D. C. natives. I didn't want them to see me, an awkward girl who felt much too small to be worth paying attention to. This time, however, after only a moment's hesitation, I called out to a gentleman who was coming up the stairs. He wore a striking tan suit and vest with a purple button up shirt underneath. I knew he was no tourist.

"Excuse me, do you know if there is an elevator down there?"

"Yes ma'am, there should be," he said back, nodding graciously.

Hoisting my bike with added strength, I continued my stumbling way down the steps with confidence. The question of what waited at the bottom did not hold me back anymore.

Even with a panda research facility based in China, along with countless zoos researching panda reproduction, little is known about how panda reproduction works. As if their isolation,

picky diet, and tricky evolutionary situation weren't enough, pandas are insanely difficult to breed. Female pandas come in to heat once a year, and their receptivity to males only lasts two to three days out of the entire year. That's it. Meanwhile, even after the female has been fertilized, the egg freely floats for up to 14 days before implanting in the lining of the uterus. In the case of twins, the mother will chose only one of her two offspring to care for, allowing the other to die off.

During pregnancy, it is nearly impossible to know if a panda is actually pregnant. The only true indicator is when the panda will suddenly give birth after a three to five month gestation. When the baby is born, it is only three to five ounces—the size of a stick of butter. Blind, with very little fur, the helpless baby depends entirely upon its mother during the rest of its development. All infants, at birth, are extremely susceptible to disease. Their food intake is extremely important, and they cannot regulate their own body temperature very well. But even more than most, baby pandas are disease prone and helpless, probably because they are so underdeveloped when they are born (as compared to many wild animal infants, some of which can run only hours after birth).

For pandas in captivity, breeding can be an absolute nightmare for pandas and breeders alike. Several zoos (including the San Diego Zoo) have been successful at breeding, and the breeding facilities in China produce several baby pandas each year, but their successes seem minimal when compared to the difficulty of breeding in the first place. For every panda that is born, there are countless unsuccessful breeding attempts. The usual breeding system starts with keenly observing the female for any changes during breeding season.

Female panda behavior begins to change during the month leading up to estrus, but even then, hormone levels are difficult to track. After years and years of research, artificial

insemination is still a tricky business, though it is the go-to solution for pandas that are difficult to breed. Sperm is collected from the male and examined for breeding soundness. Only the best sperm is used in artificial insemination, because scientists want to increase the chances of a good pregnancy. In most cases, the collected sperm is frozen in a sperm bank and pulled back out when it is needed. With the right kind of freezer, sperm can be frozen for years and years, long outlasting the actual male from which the sperm came. It's a twisted way of living forever, and in the sperm bank at the National Zoo, there are thousands of endangered species frozen in there: a strange insurance policy against the ever darkening future. If we can't save them now, we can at least freeze the sperm. Maybe someday, someone will come along and find a way to clean up the mess we made. But for now, zoo officials have to keep trying.

As the years went by, Carl began to make "many friends among the lions, tigers, and panthers." Years spent training animals according to his kinder method started to give Carl a new perspective. He started to see the animals as more than things he could use to make money. He formed bonds with his animals, even the ones he spent a short amount of time with. One of his "oldest friends" was a lion that had been caught in 1890. Having stayed with Carl for only two months, the lion was sold to the zoological gardens in Hamburg.

Many years later, Carl was in the Hamburg area, and he made a bet with his fellow traveling companions that the lion, now old but still living at the zoological gardens, would still remember Carl, just by the sound of his voice. Carl and his friends went to the zoo, and there, Carl proved his point. While he was outside the animal's view, Carl called the lion's name. The lion "came up to the bars and would not rest until [Carl] had greeted him and stroked him."

Seeing the humanity in his animals made Carl, even if ever so slightly, more human.

As Carl continued to work with his animals, he also pioneered the theory of animal acclimatization. Carl theorized that an animal could become used to their new environment and be quite healthy in the outdoors, even if the climate in the zoo was vastly different from their natural habitat. Carl said:

> I hoped to show that far better results could be obtained when they were kept in the fresh air and allowed to grow accustomed to the climate. I wished my new park to be a great and enduring example of the benefits that can be wrought by giving the animals as much freedom and placing them in as natural an environment as possible.

It seems that Carl wanted to make it so that others could see his animals in the same way that he saw them. He wanted people to understand that to him, his animals were more than animal. He needed people to see through the bars, and so Carl decided to remove them. He wanted the animals to be seen not as captives, but "free to wander from place to place within as large limits as possible, and with no bars to obstruct the view and serve as a reminder of the captivity." In releasing his animals and granting them freedom, perhaps Carl was freeing himself from the confines of his own past.

Carl began his project by determining what his animals were capable of. Carl tested his tigers to see how high and far they could jump and logged facts as he watched his lions leap across ditches he had dug, all until he knew exactly what dimensions of height and length exceeded the capabilities of his animals. And then, he dug ditches. He called them moats, and they surrounded his animal enclosures. Carl added rocks and picturesque vistas to make each enclosure look like the real thing. Carl describes the vast panoramic view he created in his memoir *Beasts and Men*:

> As one looks beyond this large prairie the spectacle presented becomes still more remarkable for only a few steps from where the herbivores are enclosed, a number of lions may be observed wandering about in a rocky gorge, not shut in by any fence; while beyond these again a high mountain fills the horizon, on which may be seen all manner of Alpine creatures. Outlined against the sky beyond a markhor-buck stands on a lofty ridge and even as we watch, it gallops off and takes a flying leap over a deep chasms lying it its path.

At that time, panoramas were one of the most popular forms of entertainment. Visitors to museums or exhibitions would stand entranced as they gazed upon stationary re-creations of historical moments. Huge paintings, sculptures, and lighting created scenes that inspired and awed onlookers for hours. It is no surprise, then, that Carl's introduction of a vast living panorama was an instant hit. Advertisements proclaimed Carl's park as a "Zoological Paradise—the Zoological Garden of the Future" ("All that is missing to complete the illusion is the presence of Adam and Eve!").

Suddenly, there were no more bars for patrons to look through. The new zoo made people more comfortable with viewing the animals. They need not feel guilty for gazing at animals behind bars any more. They need not be reminded of feelings of conquest and domination. With no bars, they didn't need to remember to be afraid of the animal that the bars were protecting them from. Instead, they could be transported to another world by the realistic exhibits. They could see the animals as they might look in their natural habitats, feel more educated, and leave feeling enlightened and closer to animals. If Carl felt guilty, he didn't have to feel guilty anymore. If his enclosures weren't really enclosures at all, he was really educating people, treating the animals well, and slowly removing the damage he'd done for so many years.

Zoos all over the world began to take up the new ideal of removing the bars.

Years later, Carl's new enclosure designs would become known as the Hagenbeck Legacy.

I danced in the middle of a street just outside Debi and Jeff's neighborhood, danced in front of the Jefferson Building, in front of the Capitol on Memorial Day, in front of the Native American Museum, inside the Museum of Natural History, in the elevator of the Adams building, in front of a giant globe just outside the map reading room, on top of a car, on the wall of a fountain in the middle of a roundabout on Connecticut Avenue, in an alleyway in Georgetown and at the National Zoo. It was like strengthening a mental muscle. Each time I pumped my fists, crisscrossed my legs, or spun in circles, my mind started to accept the fact that I didn't need to worry about what anybody else might think about what I was doing. If it was important to me, that was all that mattered.

Just outside the Madison building, after having spent four hours inside studying films strips and news clips, I gave myself the reward of filming a few clips for my movie. The first would be of me jumping out from behind one of the pillars. Logistically, this one was tricky. I had to make sure no one was walking by, but because I was behind the pillar, it was difficult to tell when the coast was actually clear. The risk factor was positively thrilling.

I set my camera on a wall, made sure it was at the right angle, and pressed record. I climbed up behind the pillar, and waited a few seconds. Nobody walked by. I hadn't seen anyone near when I hid. Now was the moment. I counted to three, and jumped.

I nearly knocked over a young woman with long dark brown hair and sunglasses. In the initial shock, I tried to just keep walking, acting as if jumping out from behind a pillar was

completely normal. But then, I realized something that made my already burning cheeks feel positively sunburned. I knew this young woman. It was Kristin Ladd, a grad student and co-worker back at my university. She saw me, I saw her, and there was no going back.

My face still red, I started talking to her, trying not to remember my hair was up in two braids, I was wearing a simple grey t-shirt, and that I didn't have cute sunglasses like she did.

"What are you doing here?" I blurted out after giving her a cursory hug.

"I just started an internship with the Library of Congress. Today was my first day. What are you doing here?" Kristin asked.

"I'm just here doing some research for a few weeks. I can't believe I ran in to you!" I blushed more, realizing how I'd very nearly run into her, literally.

"Really? What are you researching?" She looked interested. I could feel my face draining of color. She wouldn't be interested after I told her.

"Um. It's for my thesis. I'm going to do a nonfiction piece."

Kristin's face didn't lose any interest. She actually became more interested.

"Oh really? Those can be tough. That sounds awesome! What's it going to be about?"

I felt the familiar dread rise, but her expression suggested she really was interested.

"Well, I'm not totally sure, to be honest. I wanted it to be something about animals, but I'm feeling pretty lost about it right now."

She continued to smile.

"I'm sure something will come along. Isn't that part of it? You just have to keep going till you find it?"

I think it is possible that my mouth may have dropped open.

"Yeah! That's exactly it!" My cheeks were still warm, but now it was more because I felt relieved. She didn't think I was stupid for not knowing what to do with my research.

Kristin nodded sympathetically. We chatted back and forth and exchanged numbers. Kristin went her way, and I pretended to go mine, but once she rounded the corner, I went back to finish my task of jumping out from behind pillars. As I waited behind the pillar to make sure the coast was really clear, I realized that maybe my fight to redeem myself from my fears wasn't going to be a losing battle anymore.

The current pair of pandas at the National Zoo, Mei Xiang and Tian Tian, have been at the Zoo since 2000. On the Zoo's website, they are dubbed as ambassadors of conservation. Since their arrival, just as their predecessors, they have been unable to produce a panda on their own, though artificial insemination has worked. Each year, researchers have impregnated Mei Xiang with Tian Tian's sperm via artificial insemination. One cub, so far, has survived to adulthood: Tai Shan. Once he was old enough, he was taken back to China. Unlike Tsing Tsing and Ling Ling, Mei Xiang and Tian Tian are not a gift. They're an expensive loan, and the Zoo is only allowed to keep them so long as they can get the pandas to breed. Any babies must go back to China. The pressure to produce and to preserve is even greater than ever before.

Mei Xiang and Tian Tian are under almost constant observation. If you go online to the National Zoo website, you, too, can watch them (or stalk them) on the panda cam, day or night. Due to the large number of people accessing the panda cam, you can only watch for five minutes before it kicks you off to give someone else the chance to peer at a panda from however many thousands of miles away. At the Zoo, right next to the indoor panda enclosure is a glass-walled room, filled with TV screens, each showing a different view of both Mei Xiang's and Tian

Tian's enclosures. With a joystick, volunteers and scientists can move the cameras, if needed, in order to improve the view of a wandering panda. There are volunteers, some of whom have been with the panda team for years, who watch the pandas for hours on end the way prison guards watch inmates, tracking even the slightest movements. There are codes for different types of rest that the pandas might engage in, codes for stationary activities (tongue sucking, paw sucking, grooming), codes for actions (pacing, standing, pirouette, swaying, investigating or exploring, scent marking, water play), eating and drinking codes, and vocalization codes (bleat, honk, grunt). Essentially there is a code for nearly every second of a panda's life.

The zookeepers and volunteers are trying, desperately, to crack the mystery of the panda. They need to learn what every behavior means. If they can decipher the code of panda action, perhaps then they can figure out when Mei Xiang is ready to mate. Maybe then, they can understand how to improve the panda's quality of life, maybe even make it so they can reproduce without artificial insemination. Their dreams are grand, their hopes huge, and most of it centers around panda reproduction.

The walls of the indoor panda exhibit are lined like a museum with information about panda reproduction. They want every single visitor to know, without at doubt, that the panda team is trying their darndest to get another panda baby, and soon. Sometimes, it almost seems as though that's the only thing that matters to them. *Mei Xiang might be pregnant.* The whisper echoes through the exhibit hallway from the TV set up next to Mew Xiang's enclosure. *We won't know until fall, when she'll give birth, but all our evidence leads us to hope that she is, indeed, pregnant.* The constant effort to research panda reproduction and the incessant push toward having a baby have become what the pandas are all about.

What zoo keepers and zoo patrons don't know is that three months after I get home, Mei Xiang will give birth to another panda. A week later, a long enough time that the keepers were hopeful that she would live, the baby panda will die. Her lungs weren't developed enough for life outside the womb.

There is a book I found at the Library of Congress called *The Doomsday Book of Animals*. Within its pages, author David Day chronicles the animals we've already had a hand in erasing. Ever since I flipped through that book, its purpose has haunted me. Day wrote his book to show us what we've already lost. I think his hope was to inspire us to protect what we might still lose. From the day I looked through that book, I've wondered what the entry on Pandas might say.

> The mountain ranges of China were the last stronghold of the giant panda (*Ailuripoda melanoleuca*). The territory of the giant panda was steadily lost due to logging and human population growth and the giant panda dwindled in numbers beginning in the early 1900s. Breeding efforts worldwide were not enough to keep the panda from continuing to die off…

I can imagine what the last living panda in the world might look like.

Solitary, in its own enclosure built according to the Hagenbeck style of mimicking real life, the last panda in the world paces back and forth. There are cameras mounted on the walls at every possible angle, and people all over the planet log on to watch the panda pace. They peer at the panda, hoping scientists can figure out a way to save it. The frozen semen bank from the last 100 years hasn't done any good. Countless breeding attempts have failed. Each minute that goes by brings the panda one minute closer to extinction and all anyone can do is watch.

When the final giant panda dies, I imagine the exhibit will be left empty, at least for a while. It will become a sort of living monument. A horrible reminder of all the other empty cages we've created. A plaque might be placed at base of the enclosure with the author Henry Hough's words.

"There is no survivor, there is no future, there is no life to be recreated in this form again. We are looking upon the uttermost finality, which can be written, glimpsing the darkness which will not know another ray of light."

Like Carl, we are trying to repair the damage we've done, and like Carl, we can have no idea what effect our efforts will have on the future.

Carl never lived to see it, but once his enclosures became a world-wide norm, zoos began to change. At first, while they did provide opportunities for conservation, they were still largely about entertainment. There is an old film strip from the early 1950's about the National Zoo, complete with zippy music and the classic voice-over narrator who takes us on a tour. You'd first see elephants, at home in the black, white, grey color scheme. The baby, a gift from India, gets a bath, and the peppy voice calls it "a bath substitute he'll never forget. As if he'll forget anything anyway." The camera switches to bears, big brown heads and powerful streamlined bodies up on their hind legs begging for more fish—hand fed by the keeper. Penguins come next, and our friendly narrator reminds us that for the penguins, "every meal is a dress up affair." The camera captures the images of monkeys behind bars, deer standing stock still upon rocks, and those bears, a mix between Alaskan Brown and Polar bears, standing there, heads moving back and forth, watching the fish in the hand of the keeper. The voice comes again as the reel starts to end:

"Your zoo is full of strange and wonderful things. Come back again someday." The 1955 newsreel calls to us. Come see the things we have on collection.

The next film is vastly different. Narrated by a child and her grown-up friend, this 1980's version removes any jokes (except the playful banter between child and adult) and instead focuses on all the conservation projects the National Zoo is able to boast of. The narrator provides the National Zoo's history and quickly moves on to what the zoo is doing now. The zoo director, giving a tour in his golf cart, states the three purposes of the zoo: One: Education. Two: Correct wrong attitudes toward animals. Three: Convince people we should try to preserve animals for future generations.

Zoos now, as opposed to their more humble beginnings, always have an agenda for conservation. Their claim is that we need to keep the animals to try to preserve them for the future, but perhaps zoos feel like they have to make up for what Carl and his contemporaries did. Animals have been put on display since ancient times, but from the 1800s and on, not only were we capturing them like crazy, but we had no regard for their habitats. Carl and his peers had no way of knowing that, while pushing for the growth of zoos during their time, they were creating the necessity for zoos in our time.

We try to tell ourselves, now, that each zoo, with their beautiful new enclosures that are more like real life than ever before, is like a modern ark. We have to keep the animals and preserve them as an insurance policy against their wild counterparts. What if, for example, all the pandas in the wild finally died out? The excuse is clear; we have to keep the animals. If we don't, we could lose them altogether, and we'd only have ourselves to blame.

A week after I nearly collided with Kristin, two days before my sister Katie was going to come rescue me, I took Kristin with me to the National Zoo. Of all the days and hours I'd spent at the zoo, that one was the most fun. She listened to me spout out all the facts I'd learned about each animal and exhibit, and I thrilled at the chance to show her my favorite spots.

Our first stop was at the red panda enclosure. Red pandas have always been one of my favorites. The enclosure at the National Zoo is just like the other typical animal enclosures: there are no bars, just a deep ditch and a low glass wall to keep the humans from entering the animal's domain.

"See the ditch?" I pointed downward. "Do you know that a man named Carl Hagenbeck is the one who had the idea to use ditches to keep animals safe and away from humans?"

Kristin shook her head, "That's cool!"

I grinned. Kristin was on my turf, whether she knew it or not, and as we walked, I suddenly discovered that I'd been longing for someone to listen.

"The idea behind Hagenbeck's new cages was that people would see animals the way they are in nature, but what's funny is that in nature, we don't usually see animals. They're always hiding, because that's what comes naturally to them. So it's all sort of fake." I pointed at a badly concealed toolbox sitting next to an equally obvious doorway in the fake rock wall.

I can't even remember half the things I said, and I must have sounded downright preachy. I wish I'd talked more about my research. I wish I had mentioned the way that Carl's name whispered to me from every single book like a ghost. Maybe telling her about him could have helped me see then that Carl's removal of the bars meant something to me personally. Maybe I would have started to see that his story was worth writing about. I wish I'd taken her to the panda building, told her about Mei Xiang and Tian Tian . Told her about all those dead panda babies.

Told her how the way keepers and tourists watch, their faces pressed against three-inch glass, makes me feel sick. I wish I'd said all that, but I didn't.

Whatever I said, Kristin nodded, smiled, and listened, genuinely fascinated by what I had to tell her. Maybe she wasn't the only one who would like what I had to say. We continued to meander through the zoo, passing the donkey-like Przewalski's Horse, walking across the bridge that spanned the elephant's yard, and on to the bird houses. Sometimes, Kristin would take her turn to talk, wondering herself what she wanted to write about next. We listened and encouraged one another, and I felt like I belonged somewhere.

As we gazed at the flamingos, Kristin wondered out loud,

"Why do their legs bend backward?"

I hesitated, then said, "Actually, I think it's because that joint is really their ankle. So it isn't backward, it just looks like it." Where had that even come from? Kristin looked just as surprised as me, and as she read the sign in front of their pond she marveled,

"You're right! That's what it says here!"

Somehow, I'd suddenly become the expert in something. I could answer her questions, tell her facts about things she didn't even know she didn't know. I doubt she even remembers that odd moment about flamingo legs, but for me, my entire desire to write about animals was redeemed. I was not useless, not in the slightest. I decided it was time to fess up.

"Remember how I kinda jumped out from behind a pillar when we first saw each other?" I asked, my face going red. "Well, I'm making a music video, so I had to…"

Kristin laughed, and as I explained about all the times I'd danced in front of monuments and buildings by myself, she laughed some more.

This was an important moment. I knew I wanted some footage of me dancing under the ivy covered bowers that shaded the pathway, and if I waited till she left, the angle wouldn't be the same as if someone else were actually holding my camera for me.

"Would you please hold my camera for me while I dance here?" I asked.

The clip of me dancing on the shady path of the National Zoo is the only clip where someone else held the camera for me rather than me having to find a place to put it. That time, I danced with more confidence, because even if someone walked by, I wasn't alone.

Bibliography

Bell, Catharine E. *Encyclopedia of the World's Zoos*. Chicago: Fitzroy Dearborn, 2001. Print.

Bourdon, Richard M. *Understanding Animal Breeding*. Upper Saddle River, NJ: Prentice Hall, 2000. Print.

Croke, Vicki. *The Modern Ark*. UK: Prentice Hall & IBD, 1997. Print.

Day, David. *The Doomsday Book of Animals: A Unique Natural History of Three Hundred Vanished Species*. London: Ebury, 1981. Print.

"Giant Pandas At the National Zoo." *National Zoo News. N.p., n.d. Web. Sept. 2012-April 2013.*

Hagenbeck, Carl, *Beasts and Men: Being Carl Hagenbeck's Experiences for Half a Century among Wild Animals.* Trans. Hugh Samuel Roger Elliot and Arthur Gordon. London: Longmans, Green, 1910. E-book.

Hancocks, David. *A Different Nature: The Paradoxical World of Zoos and Their Uncertain Future*. Berkeley: University of California, 2001. Print.

Livingston, Bernard. *Zoo: Animals, People, Places*. New York: Arbor House, 1974. Print.

Lucky Twice. "Lucky (Radio Edit)." Family Tree Records, 2006. MP3.

"The National Zoological Park Souvenir Map." Map. Smithsonian Institution. 2012. Print.

The National Zoo: The Zoo Behind the Zoo. Dir. Alyce Myatt. Smithsonian Institution. 1989. Laser disc.

Olney, Peter J. S., and Fiona A. Fisken. *International Zoo Yearbook*. London: Zoological Society of London,1957-2003. Print.

Pandas: A Gift From China. Encyclopedia Britannica Educational Corporation. 1974. Film strip.

Philo, Chris, and Chris Wilbert. *Animal Spaces, Beastly Places: New Geographies of Human-animal Relations*. London: Routledge, 2000. Print.

Rothfels, Nigel. *Savages and Beasts: The Birth of the Modern Zoo.* Baltimore, MD: Johns Hopkins UP, 2002. Print.

Tudge, Colin. *Last Animals at the Zoo: How Mass Extinction Can Be Stopped.* Washington, D.C.: Island, 1992. Print.

Wessel, Angela. Personal interview. 24 May 2012.

Wildt, David E., Anju Zhang, Hemin Zhang, Donald L. Janssen, and Susie Ellis, eds. *Giant Pandas: Biology, Veterinary Medicine, and Management*. Cambridge: Cambridge UP, 2006. Print.

Variety Review, No. 242: Your Zoo. Dir. John Haseler. Universal Pictures. 1957. Film strip.

Vanderbilt Television News Archives. 25 May 2012. Web.

Author Biography

Anna Bullock Brown was born in Salt Lake City, Utah. She graduated from Viewmont High School in Centerville, Utah in June 2008. She attended Utah State University with the original plan of obtaining a degree in Bioveterinary Science, after which she planned on going to vet school. Her heart had other plans, however, and after one semester, Anna switched to studying English with an emphasis in Creative Writing. Not wanting to completely leave behind her love for animals, however, Anna has obtained a minor in Bioveterinary Science. She will be graduating from Utah State in May 2013. Anna's future plans involve moving to small town Soda Springs Idaho to be a farmer's wife. Anna will continue to write poetry and non-fiction, most of which will be inspired by life on the farm. Anna also plans on writing Young Adult Fiction novels. Along with her own writing, Anna plans on running an online literary journal with her sister.